

Health Information Literacy of the University of Namibia's Students

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Abstract

This article presents the findings of a study on the health information literacy of students at the University of Namibia main campus. The study was conducted between 2013 and 2014 and consisted of two hundred and seventy one (271) participants aged between 17-19 years old. The quantitative study used a self-administered questionnaire to collect data. The findings show that the majority of the respondents strongly believed that health information is important and they were able to seek health information. They also strongly agreed that they knew where to seek health information and they liked to get health information from a variety of sources. The respondents indicated that they were more comfortable getting information from the Internet than print sources. A gap in health information literacy was revealed by the fact that the respondents found it difficult to know who to believe in health issues, suggesting difficulties in critically evaluating the health information and sources. The study concludes that although UNAM students appeared knowledgeable in some health information issues, there are some gaps which need to be addressed. The study therefore recommends Kickbusch's (2008) three way intervention strategy which comprises of culture and society, health and education systems to address the existing gaps in health information literacy.

Introduction

Health information literacy or health literacy is one of the factors that contributes to the health well-being of a nation. Low health information literacy is associated with poor health and high health costs (Shipman & Funk, 2009; Vozikis, Drivas & Millioris, 2014). Ivanitskaya, O'Boyle and Casey (2006) highlight the need for health providers, health educators, and health care consumers to acquire more advanced competencies in addition to basic health information literacy skills. These competencies as highlighted by the Association of College and Research Libraries (2000) include:

- determine the nature and extent of the information needed;
- access needed information effectively and efficiently;
- evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system;

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- individually or as a member of a group, use information effectively to accomplish a specific purpose; and
- understand many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Ivanitskaya, et al. (2006, p.1) relate these competencies to health information literacy as “evaluation of the quality of health information resources, obtaining health information documents on narrow topics by conducting advanced searches, judging the trustworthiness of health information sources, and understanding the advantages and disadvantages of different media”. Health information literacy is the set of abilities needed to recognize a health information need; identify likely information sources and use them to retrieve relevant information, assess the quality of the information and its applicability to a specific situation, analyse, understand, and use the information to make good health decisions (Medical Library Association, n. d.).

Purpose of the study

This paper is based on a study on health information literacy of the University of Namibia students which was conducted from 2013-2014. The population consisted of first year students, 17-19 years of age from all Faculties. The literature (Kickbusch, 2006; Vozikis, et al., 2014) shows that it is this age group which health information systems should concentrate on. The study adopted a screening tool developed by Niemela, Erickson-Backa and Huotari (2012) for assessing everyday health information literacy. It was based “on individuals’ self-reported difficulties in finding or understanding the relevant written health-related material” (Niemela et al. (2012, p. 126). The tool was based on a study which was conducted in an Upper Secondary School in Oulu in Finland, which was guided by the Medical Library’s Association (MLA), definition of health information as presented earlier in this paper. The 10 item tool which guided the study by Niemela et al. (2012) was based on three factors: the need of health information and perceived importance; the respondent’s ability to seek health information, and the respondent’s degree of motivation and independence in health decision making. The objectives of the study on which this paper is based were to:

1. Identify the students’ health information needs;
2. Establish how the University of Namibia students perceive health information;
3. Find out gaps which exist in health information literacy amongst the students;
4. Determine the students’ ability to use health information;
5. Determine the student’s ability to evaluate health information; and
6. Come up with recommendations on how to strengthen students’ health information literacy.

Literature review

Literature reviewed included health information needs; perception of health information literacy; gaps in health information literacy; and ability to use health information.

What is health information literacy?

In this paper health information literacy and health literacy are considered to mean the same and are used interchangeably. According to Pfizer (as cited in Medical Library Association, n. d.), a health information literate person should be able to read, make sense of, and put to use health information. Healthy people (as cited in Medical Library Association, n. d.) view health literacy as the extent to which a person is able to acquire, make sense of, and utilize health information for decision making. These definitions show that health information literacy (defined earlier) and health literacy are terms which mean the same. Parragh and Okrent (2014) consider the following as health literacy skills: knowing how to find a doctor, fill a prescription, use and pay for that medication, and understanding the medical provider’s explanations. The Society of College, National and University

Libraries (SCONUL)'s Seven Pillars of Information Literacy Model (SCONUL, 2011) depicts an information literacy landscape which shows the attributes of an information literate person. The authors of this paper argue that a health information person should exhibit the characteristics which are portrayed in the information literacy landscape. A study by Vozikiset, et al. (2014) of higher tertiary public universities and technological educational institutions in Greece, concluded that health information literacy needs to become a key policy issue, mainly focusing on young ages, where healthy (or unhealthy) behaviours are established affecting the health through the life span (p. 1). The University of Namibia study population which comprised of 17-19 year old students falls within this age group.

Figure 1 below shows SCONUL's Seven Pillars of Information Literacy Model.

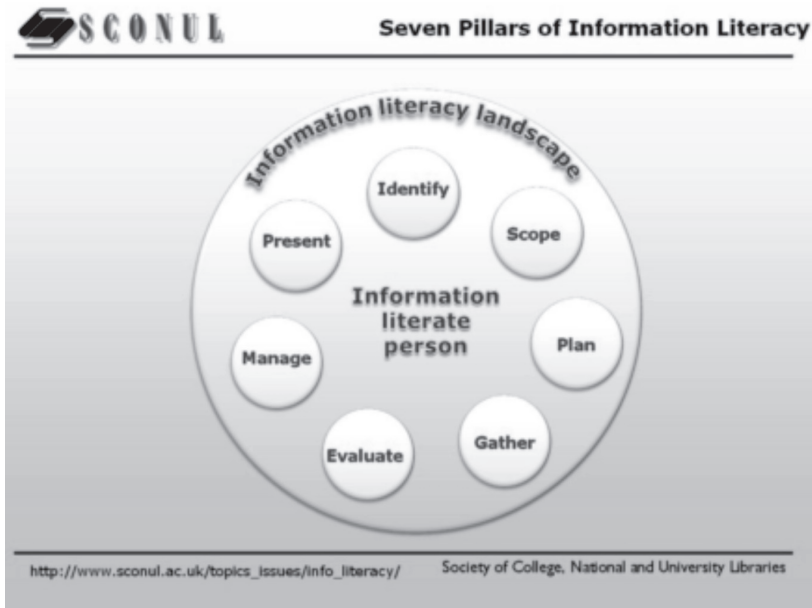


Figure 1: The SCONUL Seven Pillars of Information Literacy: Core Model. SCONUL (2011)

The above model presents the characteristics of an information literate person which require one to be able to:

- i. Identify a need for information and devise ways to seek it.
- ii. Scope – assess available information and detect gaps; s/he is able to identify the appropriate information which is required to meet the need. This includes ability to identify different types and formats of information required to meet a need.
- iii. Plan – devise strategies and tools to locate information and data. The process of planning requires an information literate person to use controlled vocabularies and taxonomies to seek information.
- iv. Gather – gather, locate and access the required information using different retrieval tools. An information literate person should be able to determine when the information need has not been met.
- v. Evaluate – should assess the credibility of the information gathered.
- vi. Manage – organize, store, and share information and data ethically, and
- vii. Present – can present data and knowledge in different ways.

Health information needs

The ability to recognise a need for information is one of the characteristics of an information literate person (Haines & Harrocks, 2005; SCONUL, 2011). When people understand the content of health information and the different approaches/health strategies, they are bound to make better decisions for themselves and others. This is because “information literacy is the most important predictor of an individual’s health status” (Niemela, et al., 2012, p. 125). The same sentiments are expressed by Kickbusch (2008, p. 101) who argues that “people have a high interest in health information and proactively seek it out because they are faced with decisions and questions about health in all aspects of their lives”. Similarly, Wilson (1999) attributes information seeking behaviour to a perceived need.

Chen and Heron (1982, p. 9) argue that information needs should be placed in their context and state that “information needs cannot be understood as mere questions that are asked of an information provider...” In order to determine gaps in health information amongst information seekers such as students, one should place the needs within the context/situation which created those needs. The above authors reveal that information needs arise when one is faced with a difficult situation. Such a need or needs lead to an information seeking pattern. Chen and Heron (1982, p. 17) conclude that “people find information when and where they can. They might rely on their own experience and thoughts or upon another person, group or institution as information provider or as a referral service to the information provider”.

Health information seeking

According to SCONUL (2011), health information seeking is preceded by a proper plan which enables the information seeker to come up with strategies to locate information. This means that one needs to possess search skills and techniques to carry out complex information searches.

Dervin’s (1993 & 1996) Sense-Making Theory perceives information as a “... human tool designed for making sense of a reality assumed to be both chaotic and orderly” (Wilson, 1999, p. 253). In this regard, Dervin portrays a framework which reveals information behaviour in three perspectives; the nature of a problematic situation, the extent to which information is used to bridge the gap of uncertainty or confusion, and the nature of the outcome which arises from the use of information (Wilson, 1999). Dervin’s model depicted in Figure 2 below focuses on various issues highlighted in this paper such as the rise of an information need and the outcome of information seeking.

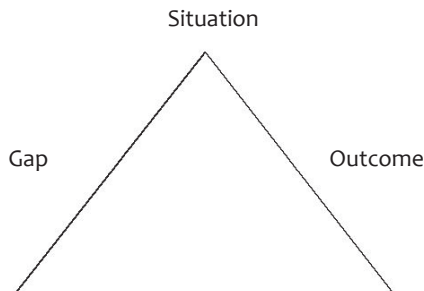


Figure 2: Dervin’s Sense-Making framework (Wilson, 1999)

Dervin’s model which has been alluded to implies that a gap in information determines the need to look for information and the availability or non-availability of information contributes to a positive outcome or vice versa in terms of closing the information gap.

Chen and Herson (1982, p. 9) earlier promoted these views in their argument that information needs arise when one is faced with a difficult situation which in turn leads to an information seeking pattern. In this regard, non-availability of health information could prompt a search which may reveal the nature of a life threatening disease. The outcome of the search could lead an information literate person to the right sources (health workers) for treatment or advice. It is therefore important to take a close look at gaps in information literacy.

Gaps in health information literacy

The lack of health literacy is not only prevalent in developing countries but also in developed countries such as the United Kingdom and the United States of America, which have been said to have high levels of health information illiteracy (Kickbusch, 2008). The *Wall Street Journal* (July 3, 2003, as cited in Medical Library Association, n. d.) made reference to the fact that studies have shown that as many as half of all adults in all socio-economic levels struggle with health literacy. This situation has persisted as reported by The U. S. Institute of Medicine (IOM) (2004 as cited in Shipman & Funk, 2009, p.3) which reported that almost half of the U.S. adult population had trouble obtaining quality health information and services due to language and cultural barriers and the complexity of the U. S. health care system. The results from Mahmood's (2013) study show that although students were comfortable with general computing, such as using Internet search engines, they were not comfortable using the digital library, online indexes, abstracts, advanced searching in databases and using the library OPAC; thereby showing a lack of information literacy skills which can be enhanced through IL instruction programmes (p. 235).

The WHO regional office for Africa pointed out that in African region, "there are gaps in health knowledge, where essential answers on how to improve the health of people in the region are missing, this is an issue related to the generation of health information or evidence, there is also a failure to apply existing knowledge to improve people's health, which is often referred to as the 'Know-do gap'" (p. 55).

Kickbusch (2008) suggests a three way intervention strategy to address gaps in health information literacy:

- i. Culture and society – a culture which promotes and values a high level of health information;
- ii. The health system – a system which informs patients on ways of looking after themselves and ensures that health resources are at their disposal; and
- iii. The education system – an education system which ensures that health skills are developed at an early age to enable people to make informed decisions about their health.

The importance of culture and society is highlighted by Atilola (2014) who comments on studies conducted on the level of community mental health literacy in sub-Saharan Africa. According to Atilola (2014), these studies which mostly used the quantitative modes of assessment "did not take full cognizance of socio-cultural underpinnings of the concept of mental health literacy in their conclusion and recommendations" (p. 93).

Perceptions of health information literacy

Information literate people should know "how to organize knowledge, how to find information and how to use information in such a way that others can learn from them" (Mahmood, 2013, p. 232). These views were earlier promoted by SCONUL (2011). This means that students' perceptions of health information literacy are very important. Mahmood (2013) conducted a study to investigate students' perceived information literacy skills in the University of Punjab in Pakistan. Various self-perception based surveys (Ivanitskaya et al. 2006; Kumar and Ochoa, 2011; Pinto, 2012) have been conducted in several universities.

The current study took a cue from these related studies to determine the perceptions of UNAM students to health information literacy.

A study in the United States of America by Robb and Shellenbarger (2014) on influential factors and perceptions of e-health literacy among undergraduate college students indicated that students felt that they knew how to use the Internet to answer questions about health, but scored the lowest on confidence in using this information to make health decisions (p.1). Similarly, Mahmood (2013) reported that the students were comfortable in basic computing and Internet searches but they were less comfortable on tasks that required specialised information searching. Mahmood (2013) argues that students' IL skills should guide the design and implementation of curriculum, as it motivates students. Amanda, et al. (2014); Horgan and Sweeney (2010) indicate that using the Internet or World Wide Web site and cell phone for health information is on the increase and has become a popular choice among the general population in recent times.

Use of health information

According to SCONUL (2011), an information literate person should manage information by using appropriate data management techniques. By so doing, information is stored and shared ethically with those who need it. Nonetheless, the Agency for Healthcare Research and Quality (n. d.) note that patients with low health literacy are less familiar with their own diseases, are not as likely to seek preventative care and tend to be admitted to hospitals more frequently. Poor understanding of healthcare instructions leads to possible negative health outcomes and patient harm due to gaps in communications, just as increased health literacy may assist patients with better compliance and treatment management (Shipman & Funk, 2009, p. 3).

Kickbusch (2008) argues that if more citizens are health literate, they are able to make sound decision about their health, interact more productively with health care providers, leading to healthy life expectancy and improved disease management. A large number of people use health information for illnesses, treatment and support (Horgan & Sweeney, 2010; Khechine, Pascot & Prémont, 2008; Wei, 2014). Horgan and Sweeney (2010) found that the majority of students used health information for mental health problems, particularly depression.

Khechine et al. (2008) states that the use of health information was mostly at the stages of identification of possible treatments for diseases and treatment application or follow-up. Most American health seekers go online to be informed about diagnoses or prescriptions, to seek tips about recovery or treatment application, to arrange for appointments and surgery, to share information, and to receive and provide emotional support. Similarly, a study in Taiwan by Wei (2014) revealed that motivation factors which make people look for health information include: health maintenance, disease prevention, treatment and medicine, medical decisions making, and helping others.

Ability to evaluate health information

One of the SCONOL's (2011) seven pillars of an information literacy model is the ability to compare and evaluate information obtained from different sources. Campos (2008, p. 89) argues that "having access to information is not enough if we do not read such information, think about its content and apply its message". Nutbeam (2008) held similar views when he stressed the need for one to be able to extract information from different formats and to be able to critically analyse it.

Kickbusch (2008) observes an increasing demand for health information which can be matched with an increase in services for health information. This leads to an information overload. It also causes confusion in choices of the different health services on offer. "Citizens are left confused about how best to look after themselves, which advice to follow, and what behaviour, treatments or products may ultimately be beneficial to them" (Kickbusch, 2008, p. 102). The author argues that such confusion is detrimental to people's health.

The study by Niemela, et al. (2012) showed that first year students were more likely to disagree with the statement "it is difficult to know who to believe in health issues" than second – fourth year students. Younger students were also more likely to disagree with the statement "it is difficult to find health information from the Internet", than older students. The above study also revealed that female students were more motivated to obtain health information than male students. Their findings suggest that gender and age are among the factors that contribute to one's ability to seek health information.

A study in the United States by Ivanitskaya, et al. (2006) to measure the health information competencies of university students concluded that "While the majority of students thought that their research skills were good or excellent, many of them were unable to conduct advanced information searches, judge the trustworthiness of health-related websites and articles, and differentiate between various information sources" (Ivanitskaya, et al. 2006, p.1).

Methodology

The study of Health Information Literacy of University of Namibia students on which this paper is based was quantitative and employed a survey questionnaire as a data collection method. The study population were students between the ages of 17 to 19. The majority (93%) of the students were in their first year of study. The sampling techniques were a combination of stratified and convenience sampling. The population was stratified by Faculties and within the Faculties convenience sampling was applied. The survey questionnaire was self-administered. It consisted mostly of health information literacy statements on a five point Likert type scale (strongly disagree, disagree, neutral, agree, strongly disagree) and respondents indicated their level of agreement with the statements. The collected data was coded for computer analysis with the use of the Statistical Package for the Social Sciences software, SPSS,[®] version 20. Descriptive statistics were completed and used to report the findings.

Presentation and discussion of findings

The following section presents and discusses the findings from the study with the following sub-headings: perception of health information; ability to seek health information; sources of health information; use of health information; and ability to evaluate health information.

From the analysis output, a sample of 271 students responded to the questionnaire. Gender distribution was male (61.3%) and female (38.7%).

Perception of health information

One of the objectives sought to establish how the University of Namibia students perceived health information. The respondents were asked if they considered it important to be informed about health issues. The results in Table 1 below show that a majority of the respondents (91.1%) agreed that it was important to be informed about health issues while 6% disagreed and 3% were neutral.

Table 1: Importance of being informed about health issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	5.5	5.5	5.5
	Disagree	1	.4	.4	5.9
	Neutral	8	3.0	3.0	8.9
	Agree	32	11.8	11.8	20.7
	Strongly Agree	215	79.3	79.3	100.0
	Total	271	100.0	100.0	

The findings from the current study are in line with Kickbusch (2008, p. 101) who argues that “people have a high interest in health information and proactively seek it out because they are faced with decisions and questions about health in all aspects of their lives”.

Ability to seek health information

An objective to determine the students’ ability to use health information required the respondents to explain whether they knew where to seek health information. Their responses varied; while 57.7% of the respondents agreed, 18.1% disagreed and 24.1% were neutral.

Table 2: Knowledge of where to seek health information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	23	8.5	8.5	8.5
	Disagree	26	9.6	9.6	18.1
	Neutral	65	24.0	24.1	42.2
	Agree	63	23.2	23.3	65.6
	Strongly Agree	93	34.3	34.4	100.0
	Total	270	99.6	100.0	
Missing	System	1	.4		
Total		271	100.0		

Some authors (Freeman, 2004; Maughan, 2001; Varga-Atkins and Ashcroft, 2004) report limitations to self-perception surveys, as students tended to overestimate their self-assessed information abilities.

Sources of health information

A question which required the participants to state if they liked to get health information from a variety of sources revealed the responses in Table 3 below:

Table 3: Preference of health information sources

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	10	3.7	3.7	3.7
Disagree	12	4.4	4.4	8.1
Neutral	56	20.7	20.7	28.8
Agree	63	23.2	23.2	52.0
Strongly Agree	130	48.0	48.0	100.0
Total	271	100.0	100.0	

The findings revealed that 71.2% of the respondents stated that they liked to get health information from a variety of sources, 20.7% were neutral while 8.1% disagreed. These results are supported by Furnival and Silva-Jerez (2014) who reported from their study that 83.6% of the respondents indicated that they obtained health information from a variety of sources from the Internet.

A follow up question sought to establish how difficult it was to obtain health information from the Internet. The responses to this question are captured in Table 4 below:

Table 4: Difficulties in finding health information from the Internet.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	154	56.8	56.8	56.8
Disagree	38	14.0	14.0	70.8
Neutral	27	10.0	10.0	80.8
Agree	34	12.5	12.5	93.4
Strongly Agree	18	6.6	6.6	100.0
Total	271	100.0	100.0	

Table 4 above shows how the participants responded to the statement “It is difficult to find health information from the Internet”.

The results indicate that the majority (70.8%) of students did not face any difficulties finding health information on the Internet while 19.1% had difficulties. These findings agree with a study which was conducted in Brazil by Furnival and Silva (2014) on the general public's access and use of health information. The Brazilian study found that about 60% of the respondents used the information found on the Internet to make critical decisions. Similarly, a 2014 national survey in the United States of America showed news, websites and online searches as some of the top sources of health information (Voices from the ... as cited in Parragh & Okrent, 2014). In 2003, Americans considered health professionals as the most important source of health information. This therefore means that access to the Internet contributes to health literacy.

Another question sought to determine how difficult it is to get health information from printed sources. Just above half (51.3%) of the respondents disagreed, compared to 19.9% who answered in the affirmative. Table 5 below presents the findings.

Table 5: Difficulties in finding health information from printed sources (magazines and books)

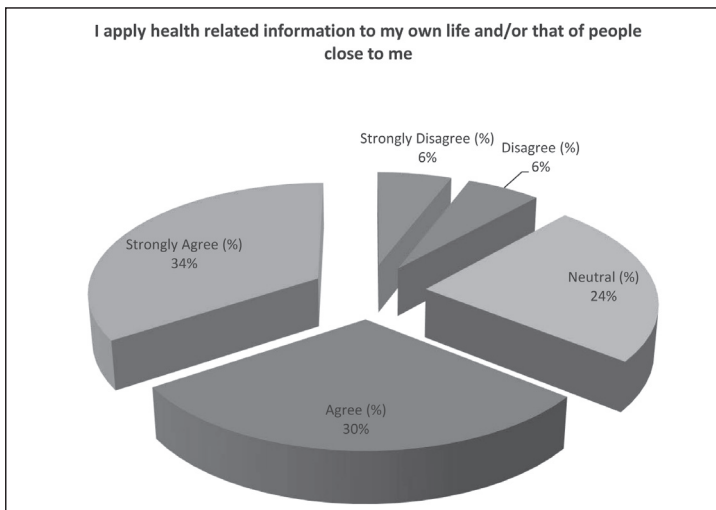
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	85	31.4	31.6	31.6
	Disagree	54	19.9	20.1	51.7
	Neutral	76	28.0	28.3	79.9
	Agree	34	12.5	12.6	92.6
	Strongly Agree	20	7.4	7.4	100.0
	Total	269	99.3	100.0	
Missing	System	2	.7		
Total		271	100.0		

About half (51.7%) of the respondents did not have any difficulties finding health information print sources and 20% had difficulties. This compares very low to the 70.8% who did not have difficulties finding health information from the Internet. The findings from this study therefore, tend to support findings of other studies (Amanda et al., 2014; Horgan & Sweeney, 2010) which found that generally students tend to be comfortable with Internet sources compared to print sources.

Use of health information

The study sought to determine whether or not students were able to apply health related information to their own life and/or that of people close to them. The results presented in Figure 3 below show that 63 % of the respondents agreed, 30% were neutral and 11% disagreed. The findings are comparable with Furnival and Silva's (2014) study which revealed that 60% of the respondents used health information critically to support decision making processes while 75% use the information obtained from the internet to make important decisions related to their health professions. Other studies (Horgan & Sweeney, 2010; Khechine et al., 2008; Wei, 2014) have gone further to show the purposes for which health information is used, such as improved disease management, mental health problems, particularly depression.

Figure 3: Ability to apply health related information on one's own life and/or that of close people

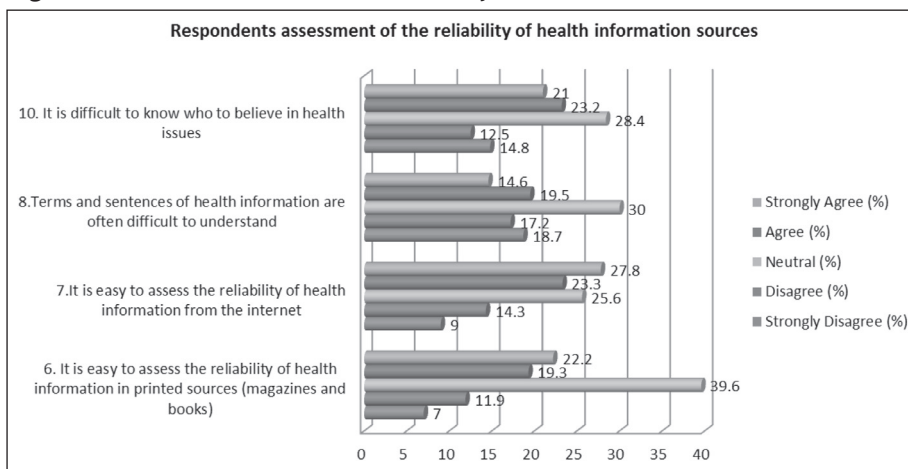


It was encouraging to observe that the majority of the students (64%) indicated that they applied health related information to their own life and or to that of people close to them. However a sizable percentage remained neutral (24%) while the sum of those in disagreement was very small (12%). Campos (2008, p. 89) argues that “having access to information is not enough if we do not read such information, think about its content and apply its message”. Robb and Shellenbarger’s (2014) study revealed that all 59 (100%) participants indicated that they knew how to use the Internet to answer questions about health, but they scored low on confidence in using this information to make health decisions.

Ability to evaluate health information

Studies (Robb & Shellenbarger, 2014; Ivanitskaya et al., 2006) have shown that although students perceived themselves to be good at searching for information they were not good at evaluating health information and lacked confidence in using the information to make health decisions. This study of University of Namibia students therefore aimed to establish the students’ ability to evaluate information sources. The respondents were requested to respond to the statements: “it is difficult to know who to believe in health issues”; “terms and sentences of health information are often difficult to understand”; “it is easy to assess the reliability of health information in printed sources”; “it is difficult to assess the reliability of health information on the Internet”; “it is easy to assess the reliability of health information in printed sources”. Figure 4 below presents the findings.

Figure 4: Students assessment of the reliability of health information sources.



In response to the statement: “it is difficult to know who to believe in health issues”, 27.3% did not have any difficulties compared to 44.2% who indicated that they had difficulties. In terms of understanding terms and sentences of health information, 35.9% of the respondents did not have difficulties 34.1% had difficulties. Responding to the statement “it is easy to assess the reliability of health information from the Internet”, 23.3% had difficulties assessing reliability of health information from the Internet, whereas 51.1% found it easy to assess the reliability of health information from the Internet. While 18.9% of the respondents had difficulties assessing the reliability of health information from printed sources, 41.5% did not have any problems.

Although students said they were able to assess the reliability of printed and Internet sources, the majority had difficulties in whom to believe in health issues. This therefore implies, as found out by other studies (Robb & Shellenbarger, 2014; Ivanitskaya, et al.,

2006) that student lacked advanced health literacy competencies which would enable one to evaluate health information and its sources critically. Kickbusch (2008) observed that there are some problems associated with information overload. One such problem is not knowing which advice to follow, and this could have a negative effect on people's health.

Conclusions

This section of the paper presents the conclusions drawn from the study findings. The objectives of the study were to: identify the students' health information needs; establish how the University of Namibia students perceive health information; find gaps which exist in health information literacy amongst the students; determine the students' ability to use health information; and determine the student's ability to evaluate health information.

The study revealed the following regarding the health information literacy amongst the University of Namibia students:

- 91.1% considered it important to be informed about health issues;
- 57.7% knew where to seek health information;
- 71.2% liked to get health information from a variety of sources;
- 70.8% did not find it difficult to find health information from the Internet; and
- 64.3% applied health related information to their own lives and/or that of people close to them.

However, gaps could be detected in health information literacy as follows:

- 44.2% had difficulties knowing who to believe in health issues; and
- 34.1% had difficulties understanding health information, implying that they could not evaluate the information which in turn affected their ability to critically use the information.

The conclusion that can be drawn from these findings is that, students considered health information important; generally knew where to seek for health information; did not have difficulties finding health information from the Internet and applied health information; and did not have difficulties finding health information from the Internet. However, the students had difficulties assessing the reliability of printed and Internet sources as well as whom to believe in health issues. This therefore implies that the students lacked advanced health literacy competencies which would enable them to evaluate health information and its sources critically.

Recommendations

One of the objectives of this study was to come up with recommendations on enhancing health information literacy of students. These findings suggest that the University of Namibia Health Service should engage the University Library and collaborate to come up with ways to develop student Health literacy skills that will assist students in becoming confident informed consumers of health information whether print or electronic.

The government of Namibia through the University of Namibia should follow Kickbusch's (2008) three way intervention strategy to address the existing gaps in health information literacy; *culture and society* – a culture which promotes and values a high level of health information, *the health system* – a system which informs patients on ways of looking after themselves and ensures that health resources are at their disposal, and *the education system* – an education system which ensures that health skills are developed at an early age to enable people to make informed decisions about their health.

Since this study did not explore the psychological and economic factors such as family income; demographic factors such as gender, and health behaviours and risks associated with the level of health literacy and health status of students, another study could be conducted focussing on these factors.

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